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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,195	11/03/2003	Karl-Friedrich Muck	05587-00359-US	3944

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EXAMINER	
ZEMEL, IRINA SOPHIA	
ART UNIT	**PAPER NUMBER**
1711	

DATE MAILED: 09/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/700,195	MUCK ET AL.
	Examiner	Art Unit
	Irina S. Zemel	1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *23 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7 and 9-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 9-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/23/04; 11/3/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

A8

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 4,377,667 to Sakurai et al (hereinafter "Sakurai").

Sakurai discloses a polymer containing polyethylene glycol block with average degree of polymerization of 110, and block copolymer of methylene oxide and ethylene oxide (13300/8 units of MO and EO, respectively). See illustrative example 15. Further, see illustrative examples 13, 17, 20 etc. all disclosing copolymers corresponding to the claimed copolymers. The invention as claimed, therefore, is fully anticipated by the disclosure of the Sakura reference.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6-7 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakura in combination with US Patent 4,431,794 to Sadlowski et al. (hereinafter "Sadlowski"), PGP 2003/0018104 to Mours et al., (hereinafter "Mours") and applicants disclosure.

Sakurai discloses a process for obtaining a poly(oxymethylene MO)/polyethyne glycol(PEG)) block copolymers by reacting a mixture comprising initial reactants (trioxane and PEG and, optionally other co-monomers, such as ethylene oxide (EO)). See, for example, illustrative example 3. The reference further discloses that the reaction temperature for solventless polymerization can be as high as 120 C. See column 10, limes 44-49.

The reference does not address the polymerization pressure, thus implying than any reaction pressure would have been suitable for the reaction disclosed in the reference. Furthermore, varying the reaction parameters, such as temperature and pressure is well known in the art with expected results of varying times of the reactions and yields of the reaction products. Also, since the disclosed reaction temperatures are relatively high, the polymerization, inherently would take place at elevated pressures in the reaction extruder. In addition, Mours provides a length discussion of temperature/pressure conditions for polymerizations involving trioxane and EO, where Mours provides ample explanations regarding choosing polymerization pressures/temperatures to obtain the desired results. See paragraph 28. Therefore, choosing the claimed conditions (pressure) would have been obvious for an ordinary artisan in view of

the general knowledge in the art and explicit teachings of Mours to achieve the desired results.

The reference does not disclose treating the resulting polymer with water or an alcohol. However, the reference discloses "shortstop" addition to terminate the polymerization. Water is one of a common termination agents in oxide polymerization as, for example, per disclosure of Sadlowski, column 3, lines 40-45. Furthermore, as per applicants disclosure, steps of water treatment of methylene oxide based copolymers is a common and known step which "result[s] is extraction of block components and monomer residues physically bound within the reaction mixture, and an improvement in the mechanical properties of moldings." See page 7, lines 20-23 of the instant disclosure. Therefore, the step of treating the polymers with water would have been obvious to either terminate the polymerization as per teachings of Sadlowki or to improve the properties of the polymers as per admissions in the instant disclosure.

The invention as claimed, therefore, would have been obvious from the combined disclosures of the above cited reference absent showing of unexpected results that can be clearly attributed to the water treatment and/or pressure conditions of the reaction.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina S. Zemel whose telephone number is (571)272-0577. The examiner can normally be reached on Monday-Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571)272-1078. The

fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ISZ

James J. Seidleck
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